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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,196	06/14/2006	Kurt Brunner	63572A	7713

109 7590 10/14/2008

The Dow Chemical Company
Intellectual Property Section
P.O. Box 1967
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EXAMINER	
VO, HAI	

ART UNIT	PAPER NUMBER
1794	

MAIL DATE	DELIVERY MODE
10/14/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/583,196	BRUNNER ET AL.	
	Examiner	Art Unit	
	Hai Vo	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 October 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11 and 21-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11 and 21-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *07/24/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. The art rejections over JP 2001-226509 in view of in view of Lin (US 6,364,988) have been withdrawn in view of the present amendment. JP'509 does not teach a foam density set out in the claim.
2. The art rejections over Wu et al (US 2002/0035164) in view of in view of Lin (US 6,364,988) have been withdrawn for the favor of the rejections over Wu in view of Hanada et al (US 2003/0186039).
3. The art rejections over Lin (US 6,364,988) in view of JP 2001-226509 have been withdrawn in view of the present amendment. Lin teaches the polypropylene synthetic paper having a thickness up to 250 microns which is way lower than the lower limit of the claimed thickness range. Further, Lin teaches a biaxially oriented polypropylene which is structurally different from a polypropylene foam of the claimed invention. However, upon further consideration, new grounds of rejections are made in view of Bambara et al (US 2005/0159496), and Hanada et al (US 2003/0186039).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1, 2, 5-9, 11, 21-23, 25, 27 and 28 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hanada et al (US 2003/0186039). Hanada teaches a multilayer sheet comprising a polypropylene foamed layer and at least one polypropylene resin layer on a surface of the foamed sheet (abstract, paragraphs 60 and 62). The ratio of the thickness of the foamed layer to that of the non-foamed layer is in the range of from 3 to 100 times (paragraph 73). The multilayer sheet has a thickness of 1mm (table 1). The foam has an expansion ratio of 4.5 which will give a density of 0.22 g/cc (1/4.5) because the expansion ratio is inversely proportional to the density of the foam. The surface weight of the multilayer sheet is 220 g/m^3 ($0.22x1x10^3$).

Hanada does not specifically disclose $S \geq 2x10^{-7} G^{3.1872}$ and $S=(Sm\ Sc)^{0.5}$, wherein G is the surface weight of the multilayer sheet expressed in g/m2; S is the geometric bending moment, Sm the maximum bending moment in the plane of the multilayer sheet and Sc the bending moment in the direction perpendicular to the plane direction of the multilayer sheet. However, it appears that the multilayer sheet meets all the structural limitations and chemistry as required by the claims; therefore, it is the examiner's position that such relationships would be inherently

present as like material has like property. It seems from the claim, if one meets the structure recited, the properties must be met or Applicant's claim is incomplete. This is in line with *In re Spada*, 15 USPQ 2d 1655 (1990) which holds that products of identical chemical composition can not have mutually exclusive properties. The same token is applied to the average bending force and maximum sheet curl. Accordingly, Hanada anticipates or strongly the claimed subject mater.

7. Claims 3, 4, 10, 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanada et al (US 2003/0186039) as applied to claim 1 above, and further in view of Andersen et al (US 5,506,046). Hanada does not teach a packaging material comprising a score line. Andersen, however, teaches a packaging material in the form of a food container comprising a plurality of score lines (figures 15A and 15B). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form the packaging material of Hanada with multiple score lines so that the multilayer sheet can be folded into a container. Andersen does not specifically disclose the depth of the score line. However, it has been known in the art that the depth of the score line will depend on the type of score, the thickness of the multilayer sheet and the desired degree of bending along the score line. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form the packaging material with the score line with a depth set out in the claim motivated by the desire to increase the range of bending motion while the score is not easily tearable.

8. Claims 1, 2, 5-9, 21-23, 25, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al (US 2002/0035164) in view of Hanada et al (US 2003/0186039). Wu teaches a multilayer sheet comprising a polypropylene foamed layer and at least one polypropylene resin layer on a surface of the foamed sheet (paragraph 57). Polypropylene can be a substantially linear polypropylene homopolymer or a copolymer of propylene and a minor amount up to 30 wt% of an alpha-olefin (paragraph 20). The multilayer sheet has a thickness from 0.5 to 2 mm (paragraph 56). As the polypropylene resin layer is much thinner than the foam layer, the thickness of the multilayer sheet is approximately the same as the thickness of the foam layer. Wu teaches the multilayer sheet having a density from 0.4 to 0.8 g/cm3 and a thickness ranging from 0.5 to 2 mm (paragraph 53). This would give the grammage of the multilayer sheet of at least 200 g/m2 ($0.4x0.5x10^3$) based on the calculation set forth in the amendment filed 03/03/2008. This is within the claimed range. Wu does not specifically teach the polypropylene resin layer containing 10% to 40% by weight of filler. Hanada, however, teaches a multilayer sheet comprising a polypropylene foamed layer and at least one polypropylene resin layer on a surface of the foamed sheet (abstract). The polypropylene resin layer contains 40 to 100 parts of filler based on 100 parts of the polypropylene resin (paragraph 62). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add the filler in the polypropylene resin skin layer in an amount as taught by Hanada motivated by the desire to improve the flexural rigidity without increasing the basis weight of the product.

Wu as modified by Hanada does not specifically disclose $S \geq 2x10^{-7}\ G^{3.1872}$ and $S=(Sm\ Sc)^{0.5}$, wherein G is the surface weight of the multilayer sheet expressed in g/m2; S is the geometric bending moment, Sm the maximum bending moment in the plane of the multilayer sheet and Sc the bending moment in the direction perpendicular to the plane direction of the multilayer sheet. However, it appears that the resulting multilayer sheet meets all the structural limitations and chemistry as required by the claims; therefore, it is the examiner's position that such relationships would be inherently present as like material has like property. It seems from the claim, if one meets the structure recited, the properties must be met or Applicant's claim is incomplete. This is in line with *In re Spada*, 15 USPQ 2d 1655 (1990) which holds that products of identical chemical composition can not have mutually exclusive properties. The same token is applied to the average bending force and maximum sheet curl.

9. Claims 3, 4, 10, 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al (US 2002/0035164) in view of Hanada et al (US 2003/0186039) as applied to claim 1 above, further in view of JP 2001-226509. Wu does not teach the multilayer sheet comprising a crease. JP'509 teaches the packaging material including a ridge (paragraph 50). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form the packaging material of Wu with multiple score lines so that the multilayer sheet can be folded into a container. JP'509 does not specifically disclose the depth of the score line. However, it has been known in the art that the depth of the score

line will depend on the type of score, the thickness of the multilayer sheet and the desired degree of bending along the score line. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form the packaging material with the score line with a depth set out in the claim motivated by the desire to increase the range of bending motion while the score is not easily tearable.

10. The art rejections over Wu have been maintained for the following reasons. Applicants contend that Wu does not teach the grammage within the claimed range. The examiner respectfully disagrees. It is true that none of the examples 7-12 discloses the grammage within the claimed range. However, it is reminded that the working examples are presented for purposes of illustration only, and are not intended to limit the scope of the reference. Further, the examiner directs Applicants' attention to paragraph 53. Wu teaches the multilayer sheet having a density from 0.4 to 0.8 g/cm3 and a thickness ranging from 0.5 mm to 2 mm. This would give the grammage of the multilayer sheet of at least 200 g/m2 ($0.5x0.4x10^3$) based on the calculation set forth in the amendment filed 03/03/2008. This is within the claimed range. In addition, Applicants argue that Wu teaches a monolayer foam, which is outside the scope of the claims. The statements are not commensurate in scope with the claims because nothing in the claims requires multiple foam layers. Accordingly, the art rejections based on Wu are sustained.

11. Claims 1-11 and 21-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bambara et al (US 2005/0159496) in view of JP 2001-226509. Bambara

teaches a multilayer sheet comprising a polypropylene foamed layer and at least one polypropylene resin layer on a surface of the foamed sheet (abstract, paragraph 128). The multilayer sheet has a thickness ranging from 0.02 to 0.5 inches or 0.5 to 12 mm (paragraphs 141 and 142). The foam has a density ranging from 1.5 to 40 pcf or 24 to 640 kg/m3 (paragraph 122). As the surface weight is dictated by the thickness and density, it is not seen that the surface weight could be outside the claimed range as the thickness and density are within the claimed ranges. Bambara does not teach the skin layer comprising a polymer including units derives from a 1-alkene monomer. JP'509 teaches a multilayer sheet comprising a polypropylene foamed layer and at least one polypropylene resin layer on a surface of the foamed sheet (abstract). The polypropylene resin layer includes a copolymer of propylene and 1-butene (paragraph 35). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the resin layer comprising an 1-alkene monomer because a polypropylene homopolymer and propylene copolymer with an alpha-olefin monomer have been shown in the art to be recognized equivalent polymers for the resin layer forming the packaging material.

Bambara does not teach the packaging material comprising a crease. JP'509 teaches the packaging material including a ridge (paragraph 50). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form the packaging material of Bambara with multiple score lines so that the multilayer sheet can be folded into a container. JP'509 does not specifically disclose the depth of the score line. However, it has been known in the

art that the depth of the score line will depend on the type of score, the thickness of the multilayer sheet and the desired degree of bending along the score line. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form the packaging material with the score line with a depth set out in the claim motivated by the desire to increase the range of bending motion while the score is not easily tearable.

Bambara as modified by JP'509 does not specifically disclose $S \geq 2x10^{-7} G^{3.1872}$ and $S=(Sm\ Sc)^{0.5}$, wherein G is the surface weight of the multilayer sheet expressed in g/m2; S is the geometric bending moment, Sm the maximum bending moment in the plane of the multilayer sheet and Sc the bending moment in the direction perpendicular to the plane direction of the multilayer sheet. However, it appears that the resulting multilayer sheet meets all the structural limitations and chemistry as required by the claims; therefore, it is the examiner's position that such relationships would be inherently present as like material has like property. It seems from the claim, if one meets the structure recited, the properties must be met or Applicant's claim is incomplete. This is in line with *In re Spada*, 15 USPQ 2d 1655 (1990) which holds that products of identical chemical composition can not have mutually exclusive properties. The same token is applied to the average bending force and maximum sheet curl.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (571) 272-1485.

The examiner can normally be reached on Monday through Thursday, from 9:00 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hai Vo/
Primary Examiner, Art Unit 1794